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Insights & Strategies

...and an Electric New Year

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...and an Electric New Year

You might think of electricity as a relatively modern technology, but it is believed that the ancient Greeks, Romans, and Egyptians used electric fish as a treatment for epilepsy and gout. Much more recently, in the early 1600s, English scientist William Gilbert coined the word “electricus”, from the Greek, to describe objects that attracted dust “like amber”, leading to the term “electricity”. In 1745-46 the Leyden jar was the first device to store and discharge static electricity. Benjamin Franklin later used a Leyden jar in his famous 1752 kite experiment, which rather than channeling lightning, actually just picked up the ambient electrical charge from a storm. Nevertheless, this demonstrated the relationship between lightning and electricity. In the early 1800’s, Alexandra Volta developed the electric battery and electric generator, and Michael Faraday developed the first electric motor. In 1882 Thomas Edison set up the first power plant in New York City, and electric streetlights in Roselle, New Jersey. Later, Nikola Tesla partnered with George Westinghouse to challenge Edison’s direct current (DC) technology, with a more versatile alternating current (AC) system and essentially kicked off the modern age of electricity.

Fast forward to 2024 and we are seeing an acceleration of a global drive to electrification as many countries strive to reduce reliance on fossil fuels, in part as an attempt to reduce carbon dioxide production and consequently slow climate change. This push is evident from the relatively rapid increase in electric vehicles on our roads.

Many companies and countries are in a race to become clean energy leaders, evidenced by large-scale government investments in long-term electrification and emission reduction projects. Since 2020, government spending has been a key driver, rising nearly 25% from 2021 to 2023¹.

The table below provides an overview of some major government investments by country. In Canada, the 2023 Budget has identified growing a clean economy as a major national project that the government compares to the Transcontinental Railway project in the late 1800’s. In the U.S., the Inflation Reduction Act (IRA), marked the largest climate-related investment in U.S. history. Additionally, China’s investments in its power sector, including solar and wind energy, electric vehicles and batteries may exceed US\$13.7 trillion from 2020 to 2060, and not to mention the various initiatives across the European Union.

The Importance of Electrification and a Clean Economy Is Evident in Government Expenditures Across Major Countries

Country	Name/Source	Funds (\$MM), Local Currency	Purpose	Sector
Canada	Strategic Innovation Fund	8,000	Subsidies and loans to support the decarbonization of Canada’s largest industrial emitters through the adoption of clean	Industry
	2022 National Budget (The Canadian Critical Minerals Strategy)	3,800	Aim to increase the supply of responsibly sourced critical minerals and support global value chains in the energy transition	
	Greener Homes Grant	2,600	Subsidies for homeowners to make their homes more energy efficient/grow green supply chains	Buildings
	Low Carbon Economy Fund	2,000	Subsidies to support both private/public projects in reducing their emissions	Industry
	Clean Fuels Fund	1,500	Subsidies to build new or expand existing clean fuel production facilities	
	Smart Renewables and Electrification Pathways Program	0.98 (3,000 more proposed)	Smart renewable energy and electrical grid modernization projects	
	Zero-Emission Vehicles Program	0.66 (1,700 more proposed)	Subsidies to incentive EV sales	
	Zero-Emission Vehicles Program	N/A	Mandatory target for 100% of new cars/passenger trucks sales to be zero emission by 2035	Transportation
U.S.	Inflation Reduction Act	392,000	Reduce carbon emissions by around 40 percent by 2030. The IRA includes a combination of grants, loans, tax provisions and other incentives to accelerate the deployment of clean energy, clean vehicles, clean buildings and clean manufacturing.	Various
India	Fiscal Budget 2023	4,300 USD (proposed)	Speeding up renewable energy initiatives	
	Fiscal Budget 2023	2,500 USD (proposed)	Electricity grid infrastructure	
Italy	Italy’s Recovery and Resilience Plan	5,700 Euros	Construction of renewable power generation installations, as well as the expansion of existing ones	
Australia	Rewiring the Nation	20,000 AUD	Modernize the electricity grid and infrastructure	
China	Fiscal Budget 2022	4,000,000 CNY	Invest in solar and wind energy, electric vehicles and batteries	
France	France 2030	34,000 Euros over 5 years	Subsidies for renewable projects and decarbonization	

Source: Government of Canada; Department of Energy; Ministry of New and Renewable Energy; European Commission; Australian Government, Department of Climate Change; IEA, National Green Development Fund; China State Grid Corp Ltd; Ministère de l’Economie, des Finances et de la Souveraineté industrielle et numérique de France

¹ IEA (2023), Government Energy Spending Tracker, IEA, Paris <https://www.iea.org/reports/government-energy-spending-tracker-2>, License: CC BY 4.0

Investing in Electrification

The above table illustrates the increasing commitments to electrification and the push to source that much needed electricity from renewable resources. While we watch the accelerating adoption of electric vehicles around the globe, the fact remains that the electricity to power those vehicles still needs to be generated, in part, by power plants that rely on fossil fuels. Furthermore, there is much debate over the sustainability and environmental costs of mining the elements used to produce the batteries needed to support these vehicles and even the infrastructure required to provide this power, versus the pipelines and tankers required to transport oil and gasoline. It is a complicated balancing act, but as more companies and governments invest in the technologies and manufacturing/industrial processes, and mining of critical elements, we should see developing opportunities for investors, especially in following sectors that may be supported or boosted by government spending and other incentives.

The Wind of Change is Blowing

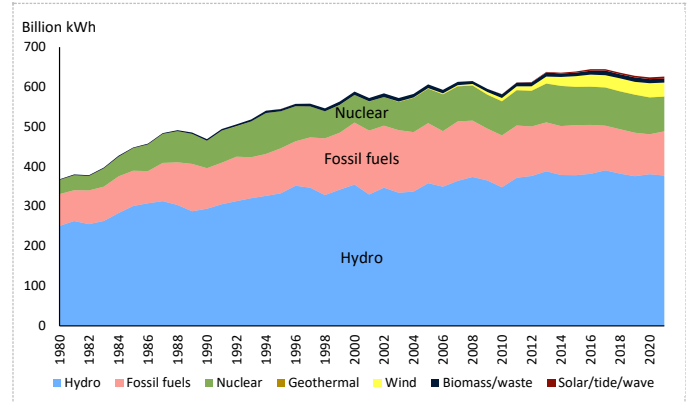
The International Energy Association (IEA) is looking for global oil demand to peak at 105.7 million barrels per day (mbpd) in 2028 and then slowly decline as electric vehicles, energy efficiencies, and other technologies come more into play. Playing further to the notion of the world reducing its reliance on fossil fuels, at the 28th United Nations Climate Change Conference, a.k.a. Conference of the Parties (COP28) of the UNFCCC, in December, the event ended with an historic agreement by 198 Parties to “transition away from fossil fuels to reach net zero” by 2050, including over US\$85 billion in funding and 11 pledges. More immediate goals included tripling global renewable energy capacity and doubling the rate of energy efficiency improvements by 2030. While COP pledges are not binding and we can debate the effectiveness of these longer-term initiatives to impact near-term climate change concerns, there is definitely a growing wind blowing and money will follow.

The Canadian Experience

Many people might associate Canada with oil production, and more specifically the oil sands. Canada does have the fourth-largest oil reserves in the world, estimated at 167 billion barrels (economically recoverable), with production of approximately 4.7 mbpd. Canada however exports approximately 3.7 mbpd (almost exclusively to the U.S.).

While fossil fuels are still abundantly used in Canada for heating, looking at electricity generation only, the country is remarkably “clean”, with one of the cleanest profiles among IEA-tracked countries, with a large share of renewables.

Canadian Electricity Generation by Major Source



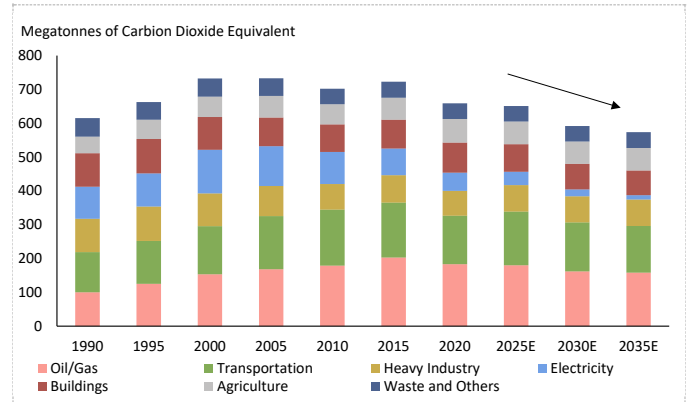
Source: Canada Energy Regulator; Statistics Canada

In recent years, the share of coal- and oil-generated electricity has significantly shrunk. Wind and solar, although currently holding a small market share, are anticipated to play a more critical role in meeting future surging demand.

Areas Where We See the Biggest Focus

Canada's federal government is fully engaged in the decarbonization race, with a commitment to achieving a net-zero emission goal. The strategy involves electrifying the nation and replacing non-renewable energy sources with cleaner alternatives. The most significant opportunities lie in areas such as oil and gas operations, transportation, and heating systems, which collectively contribute approximately 63%² to total national greenhouse gas (GHG) emissions. These areas present significant opportunities for impactful change.

GHG Emissions by Sector - Canada



Source: Government of Canada, Greenhouse gas and air pollutant emissions projections 2023. Projections based on “Reference Case” scenario which includes all government policies and measures in place as of August 2023.

EVs and Home Heating

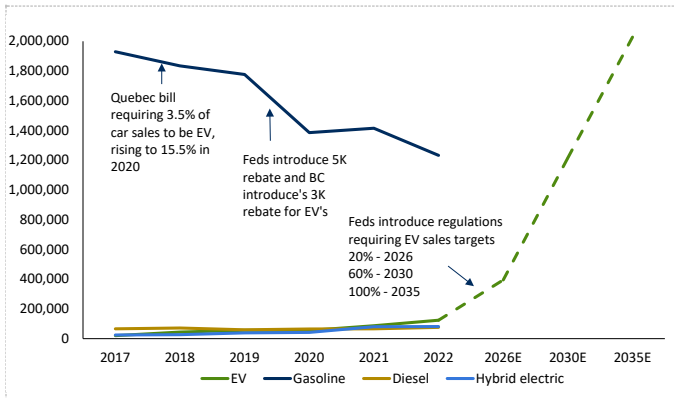
While governments may make big pledges and plans around reducing emissions, there are two areas that we see

² The Transition Accelerator (2023), Pathways to Net Zero, The Transition Accelerator, <https://transitionaccelerator.ca/net-zero-pathways/>

consumers mobilizing, in some cases supported by government incentives.

In 2021, light-duty vehicles accounted for 54% of transportation emissions and 13% of Canada's overall GHG emissions². Perhaps to participate somewhat in reducing emissions, consumers have been embracing electric vehicles (EVs) in recent years, evidenced by a 37% year-over-year growth in registrations. The government of Canada projects the number of EVs in Canada to be seven times the 2017 figure by 2030, and roughly double the current count. This would likely put annual EV registrations above gasoline-powered vehicles in the next few years. This shift from conventional vehicles to EVs is expected to increase the demand for batteries and critical minerals.

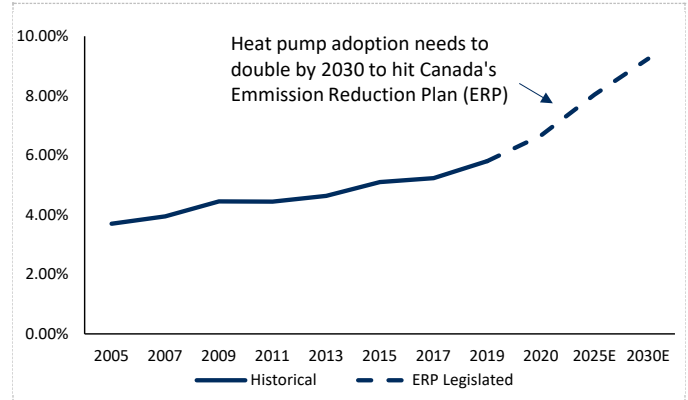
Number of Vehicle Registrations by Year - Canada



Source: Statistics Canada, Data as of Dec 11, 2023. New motor vehicle registrations, annual sum; Transport Canada Projected Annual Zero-Emission Vehicle Sales. Projections are based on meeting Canada's 2026, 2030 and 2035 ZEV sales targets.

Buildings' heating systems account for another 13% of Canada's emissions². Currently, only 6% of Canadian households use heat pumps, which are powered by electricity, while 51% rely on forced-air furnaces running on natural gas or oil³. The higher efficiency of heat pumps can lead to significant reductions in energy consumption, benefiting both emissions reduction and energy bills. Although the growth trend is not as remarkable as that of electric vehicles, opting for heat pumps is still seen as one of the most straightforward ways to move towards decarbonization. The Canadian Greener Homes Grant is expected to promote wider adoption of heat pumps, with \$250 million in oil-to-heat-pump conversion incentives through 2027. The original grant supported up to \$5,000 to make energy efficient retrofits to their primary residences. An October 2023 update increased support to \$10,000-15,000 when partnered with provincial and territorial programs. EV incentives and heat pump tax credits are also included in the U.S. Inflation Reduction Act (IRA).

Heat Pumps % of Total Home Heating Load - Canada

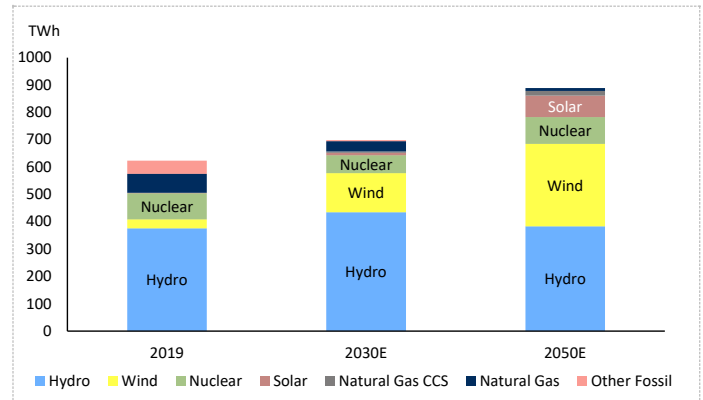


Source: National Energy Use Database; Navius Research 2022. The 2030 Emissions Reduction Plan is to reduce emissions by 40% below 2005 levels by 2030. Projections are based on a "legislated" scenario which includes legislated policies, spending that has been detailed in the federal budget, or projects that are in the planning phase.

Future Opportunities – the Big Picture

It would be impossible for Canada to achieve clean energy and emissions targets without boosting the current level of electricity generation. That said, we see a bright future in firms specializing in non-emitting electricity generation systems (wind, solar, hydro, nuclear etc.), and stationary electricity storage systems, like batteries, that do not use fossil fuels in operation. Equipment for transmission of electricity and related products and services are expected to be in demand as well. We also see technologies such as Carbon Capture and Storage (CCS) gaining interest to help countries hit their emission targets. Below, we show a proposal from the Canada Energy Regulator illustrating how Canada could be expected to achieve its net zero emission (NZE) base scenario in 2030 and 2050. In addition to the generation laid out below, approximately 7.5% of the solar and wind power would first need to be stored in some kind of battery.

Projected Electricity Generation in Canada, Net-zero Emission Base Scenario



Source: Canada Energy Regulator, Electricity Scenarios. Projections are based on Canada's target to reduce GHG emissions by 40% below 2005 levels by 2030 and net zero by 2050.

³ StatCan (2023), The Heat Is On, Statistics Canada, <https://www.statcan.gc.ca/o1/en/plus/2717-heat-how-canadians-heat-their-home-during-winter>

Canada anticipates needing a 12% increase in electricity generation by 2030, and 44% by 2050 to meet growing demand. The proportion of non-renewable sources, including fossil and natural gas, is projected to decrease to 6% by 2030 and be phased out by 2050. The most substantial growth is expected in wind and solar energy, both in absolute terms and relative share, accounting for nearly half of the total generation.

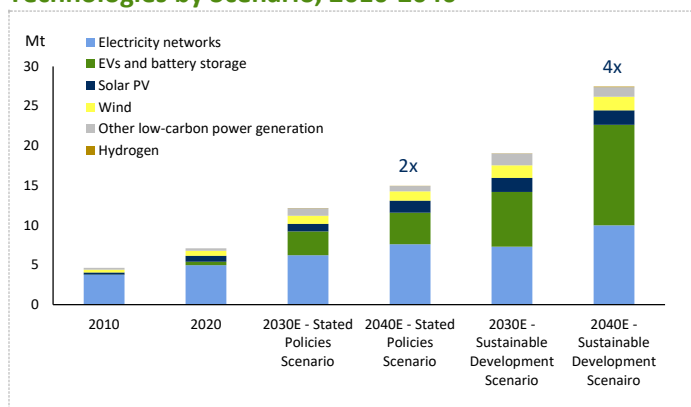
Canada has a Mining Opportunity

As much as Canada is known for its oil & gas industry, it is also well known for mining. Minerals are becoming increasingly essential as the world shifts its primary energy supply from fossil fuels to clean energy. According to the stated policies scenario, the global demand for minerals in clean energy technologies is expected to double by 2040 compared to current levels. Among the rapidly growing industries we discussed earlier, electric networks, EVs and battery storage are leading the surge in demand.

Among all the crucial minerals, copper stands out as the most widely utilized in clean energy technologies, spanning applications from EVs to the generation of wind and solar power.

We should make a point here that Canada’s energy sector will still be relied on for the foreseeable future as the demand for oil and gas, although potentially peaking, will still be in significant demand in both domestic and international markets for decades to come. The export of liquefied natural gas (LNG) from Canada to Asian markets specifically, is likely to persist for some time as this would help to support growing energy needs in that region, and could reduce GHG emissions by displacing coal⁴.

Total Global Mineral Demand for Clean Energy Technologies by Scenario, 2010-2040



Source: IEA, Total mineral demand for clean energy technologies by scenario, 2010-2040. “Stated Policies Scenario” projections are based on current policies in place. “Sustainable Development Scenario” projections describe the required evolution of the broad energy sector to reach key energy related goals of the United Nations.

Lots of Opportunities

In a nutshell, the transition to clean energy is a broad and ongoing global competition among nations. The race has officially begun, but will be long, marked by governments allocating substantial portions of their budgets to fund diverse projects. Given the progress we have observed, now seems like an opportune time to explore investments related to the themes of clean energy transition and electrification. Taking advantage of these substantial opportunities could prove rewarding in the foreseeable future.

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⁴ CAPP (2023), Canada’s Energy Mix, CAPP, <https://www.capp.ca/energy/canadas-energy-mix>

Inflation Reduction Act Charges U.S. EV Market and National Security Drive

Ushering in a new electrified era for the U.S. has been a leading item on the Biden administration's agenda, with the US\$392 billion 2022 Inflation Reduction Act (IRA) standing as a signature piece of the puzzle. Within the wider electrification push, efforts to expand the adoption of electric vehicles (EVs) has been a particular focus for the White House – demonstrating a renewed focus on pairing environmental and national security concerns. This new green-security nexus will see energy risks in the Middle East traded for those in the Indo-Pacific, with much of the green transition dependent on critical minerals in Asia. With electoral politics and associated headline risk on the agenda for 2024, we provide an overview of the IRA, what has been done to date on EVs, and our outlook for sector sentiment and the landmark incentives throughout the upcoming political calendar.

What does the IRA do to support EV deployment?

The IRA is the most significant investment of U.S. federal funds towards combatting climate change to date, deploying an initial estimate of US\$392 billion in tax incentives and direct funding to support the adoption and scaling of clean technologies – including US\$14 billion in EV incentives, along with other electrification priorities (e.g. heat pump tax credits). The IRA expands eligibility and long-term certainty for green energy tax incentives through extended timeframes for applicability. The passage of the IRA was a surprise to markets and DC alike, and followed the 2021 Bipartisan Infrastructure Law that laid the groundwork for the IRA's EV provisions (through US\$7.5 billion in funding for EV charging). The IRA supports EV deployment through the uncapped Section 30D tax credit, which provides up to US\$7,500 in individual tax credits for purchasers of qualified EVs meeting the following criteria:

- Final assembly in North America
- Sources 40% of its critical minerals from the U.S. or a country that has a free trade agreement (FTA) with the U.S.
- Half of its battery components are assembled in North America

If the vehicle only meets one of the two latter requirements, a partial US\$3,750 credit is available.

What has been done to date?

Implementation of the IRA and the EV tax credits remains ongoing, with the U.S. federal government issuing guidance throughout the year (and likely into 2024) that sets out eligibility for the generous incentives. The EV tax credits have become one of the most contentious and visible parts of the ongoing implementation for the IRA, with the minerals

sourcing requirements seeing both domestic and international pushback over U.S. job creation and market distortion concerns respectively. The language of the IRA left several questions open about the critical minerals and battery requirements, with the Treasury Department responsible for interpreting the language. For example, a “free trade agreement” has been defined as including both countries with FTAs and those with non-comprehensive FTAs – opening the door to specialized, novel “critical minerals agreements”.

What's next: repeal or expansion?

As election year kicks off, investor focus has turned to the impacts of the 2024 U.S. presidential race on the IRA's green energy provisions under different election outcomes, including the potential for additional incentives and for a repeal. Overall, we think a wholesale repeal of the IRA's green tax incentives is unlikely, but we are likely to see hits to sentiment throughout the election cycle as the candidates (and their policy platforms) are clarified and potential targeted repeals around expiring individual tax cuts in 2025. With the 2017 Trump-era Tax Cuts and Jobs Act (TCJA) tax cuts expiring at the end of 2025, we could see a potential Republican Congress or president use the provisions of the IRA as “payfors” to extend the individual tax cuts. Under an incumbent President Biden, we could expect to see additional legislation supporting U.S. electrification, with a particular focus on intersecting national security priorities such as critical minerals.

Ed Mills
Managing Director, Washington Policy
Raymond James & Associates

EVs and Copper

Raymond James Ltd's equity analyst focusing on the automotive industry, Michael Glen, anticipates that the industry dynamic will be more challenging in 2024 for auto volumes in both North America and Europe, and is largely anticipating something that looks close to flat. That said, he expects electric vehicle (EV) sales to continue outpacing overall.

In the Exhibit below, we look at battery electric vehicle (BEV) penetration rates in the U.S. and Europe since 2020. Thinking about 2024, we would expect EV sales growth to outpace industry growth and would not be surprised to see U.S. penetration rates move north of 10% of sales. That said, it is true that EVs do typically carry higher price points than their internal-combustion engine equivalent (we have seen estimates in the 10-20% range), and this could perhaps represent a headwind on sales in a high finance cost environment.

EV Sales Share Progression in the US and Europe

	U.S.			Europe		
	EV*	Total	Share	EV*	Total	Share
2020	257,872	14,568,362	1.8%	745,644	11,958,517	6.2%
2021	488,397	14,938,161	3.3%	1,217,917	11,774,813	10.3%
2022	809,739	13,860,055	5.8%	1,575,079	11,293,859	13.9%
2023 YTD	873,082	11,638,996	7.5%	1,630,808	10,721,198	15.2%

Source: Cox Automotive, ACEA, Raymond James Ltd. *Battery electric vehicle.

Mr. Glen covers several auto parts names that may benefit from industry dynamics. These include **Martinrea (MRE-CA)**, and **Magna (MG-CA)**, which has previously directed a large portion of its megatrend/capital spending (i.e. advanced driver assistance systems and electrification).

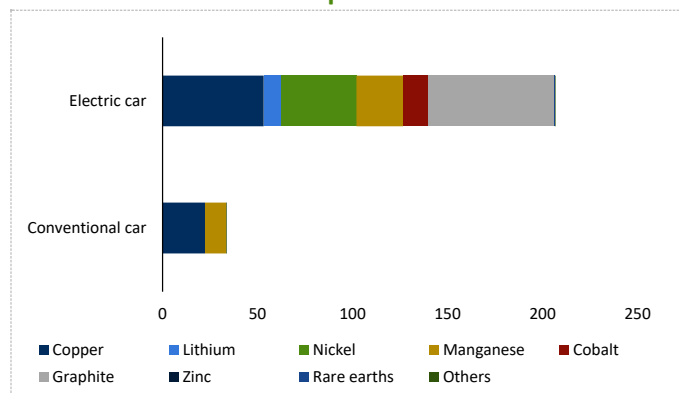
One other Industrial name where he sees a strong amount of focus on ramping EV sales is **ATS Corporation (ATS-CA)**, which builds battery module assembly systems, and has a substantial customer relationship with a large OEM.

Raymond James Ltd's equity analyst focusing on the metals & mining industry, Farooq Hamed, expects that the growing adoption of electric vehicles, and their higher copper requirements than traditional internal combustion engine (ICE) vehicles, will contribute to a copper supply/demand deficit in the latter half of the decade. He expects the copper supply shortage and high cost of developing new copper mines to drive copper prices.

Manufacturing of electric vehicles and plug-in hybrids requires a significantly higher copper intensity than traditional ICE vehicles. As of 2022, the International Copper Association (ICA)

estimated that a battery electric vehicle required ~80kg of copper while a plug-in hybrid required ~60kg, whereas ~23kg was required in traditional ICE vehicles. Going forward, engineering innovation is focused on reducing the weight of EV's which will also allow for less copper usage with estimates for copper usage in an EV by 2030 ranging between 50-65kg (still ~2.5x the copper used in a traditional ICE vehicle).

Minerals Used in EVs Compared to ICEs



Source: IEA; Data as of December 11, 2023.

As EVs become more prevalent and grow as a percentage of new vehicle sales, the impact on copper demand will be material. The International Energy Agency estimates that EV sales will be over 14mln units in 2023, which Mr. Hamed estimates represents ~450kt of copper demand or ~1.8% of 2023 global copper supply and importantly, growth over the ~10mln EV units produced in 2022 (which represented ~1.2% of the copper market). The 14mln units represent ~18% of the new car market in 2023 with the segment expected to grow to over 40% of the car market by 2030. Even if future EVs require less copper intensity, as the adoption of EVs continues to grow the segment would make up a larger portion of the overall copper market, which we expect will be one of the drivers pushing the copper market into a deficit in the latter half of the decade.

While the copper market in 2024 was previously expected to have a surplus of between 300,000 and 500,000 tonnes, based on sluggish demand growth from China as the country's real estate sector faces a downturn while fixed asset investment was hampered by heavy debt loads at the local level, recent mining disruptions are changing expectations to a more balanced market. In 2025, the market could also be closer to balanced as new mine supply is expected to keep pace with demand growth, but with the rate of new copper supply expected to slow post 2025, the copper market could move into a deficit in the latter half of the decade with demand from a growing EV sector being a key contributor to a growing imbalance.

Technical Review – EV Related Names

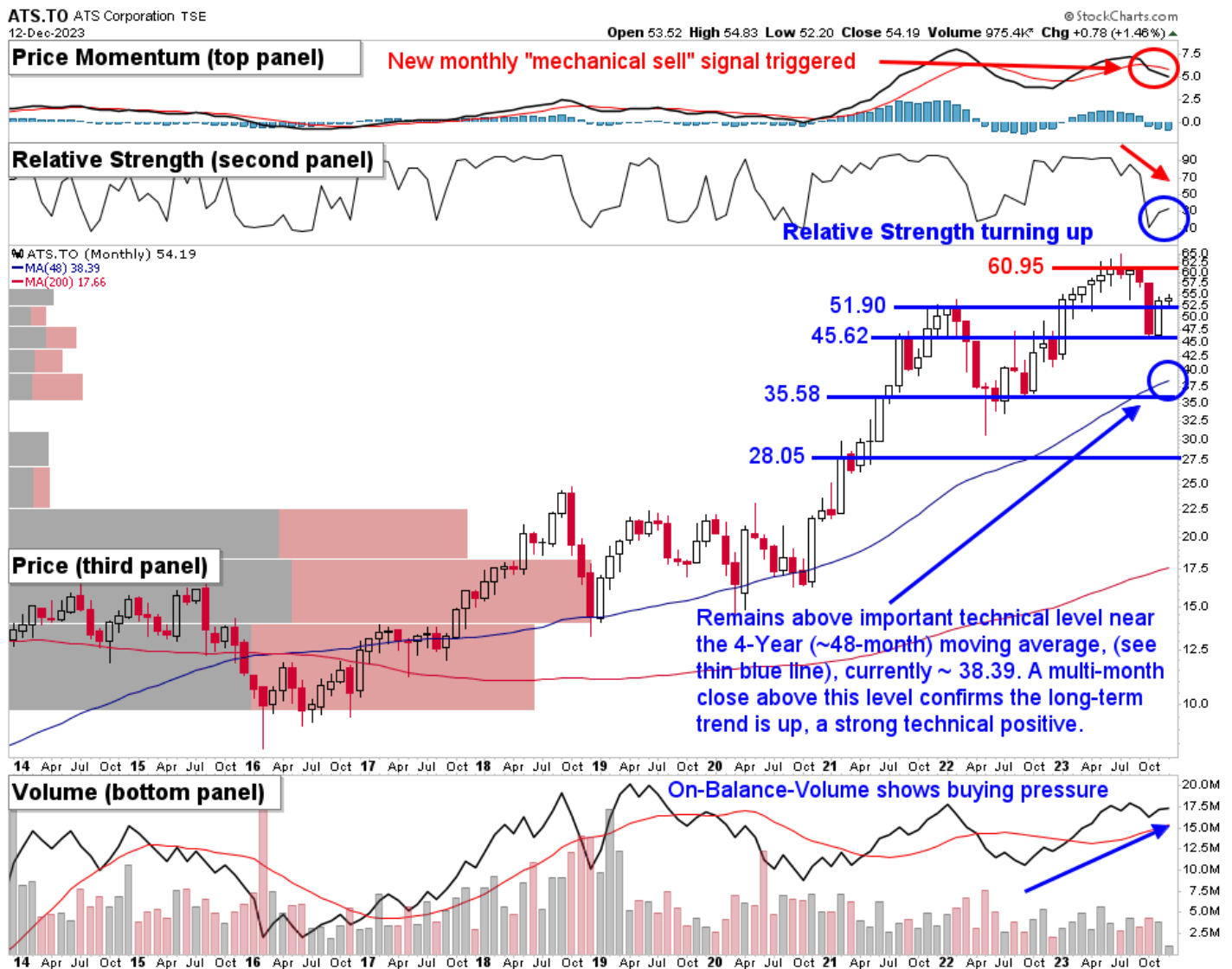
We review the technical profiles of ATS Corporation (ATS), Martinrea Intl Inc. (MRE), and Magna Intl Inc. (MG). The stock with the strongest technical profile is ATS, followed by MRE.

The following three technical positives on ATS and MRE suggest institutional investors are adding exposure to these names, a strong technical positive that is supportive of further upside:

- Long-term trend is up as both ATS and MRE are trading above a key technical level at their 4-Year (~48-month) moving average (see thin blue line, third panel, Exhibits 1 and 2).
- Relative Strength versus the TSX Composite is improving indicating investors are rotating into the stock (see blue circle, second panel, Exhibits 1 and 2)
- On-Balance-Volume is trending higher indicating the stock is being accumulated (see blue arrow, bottom panel, Exhibits 1 and 2)

We have also included two exhibits (4 & 5) on Copper that show overall positive trends.

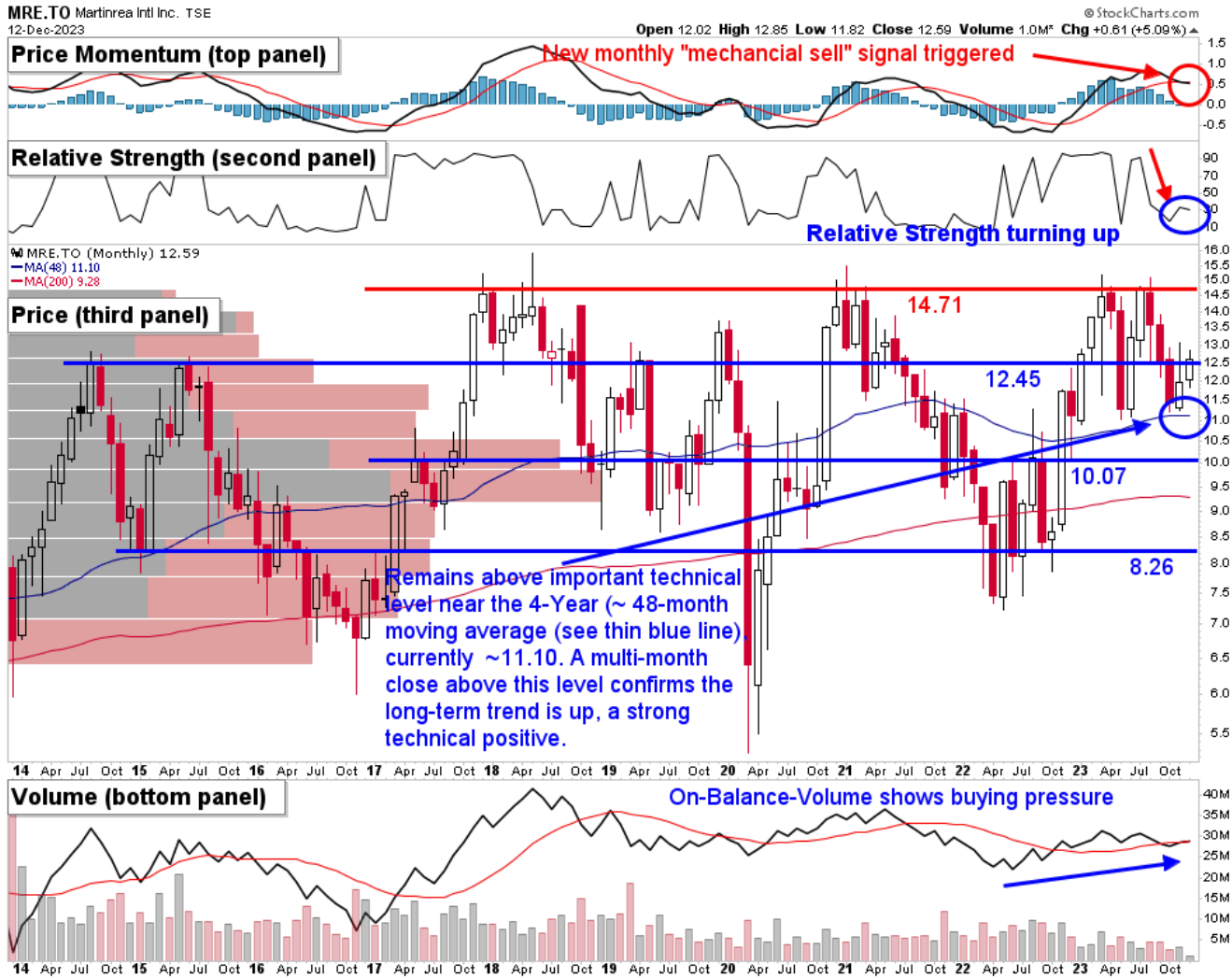
Exhibit 1: ATS – Monthly (10 years)



Source: Stockcharts.com, Raymond James Ltd.

- **Top Panel: Price Momentum (MACD):** ATS just triggered a new monthly “mechanical sell” signal (see red circle), indicating Price Momentum is weakening, a technical negative.
- **Second Panel: Relative Strength (SCTR):** Relative Strength versus the TSX Composite is turning up (see blue circle), an early technical positive.
- **Third Panel: Price:** ATS remains above an important technical level at the 48-month (~4-Year) moving average (see thin blue line), currently ~38.39. A multi-month close above this level confirms the long-term trend is up, a strong technical positive.
- **Bottom Panel: Buying/Selling Pressure (OBV):** On-Balance-Volume shows buying pressure, another technical positive (see blue arrow).

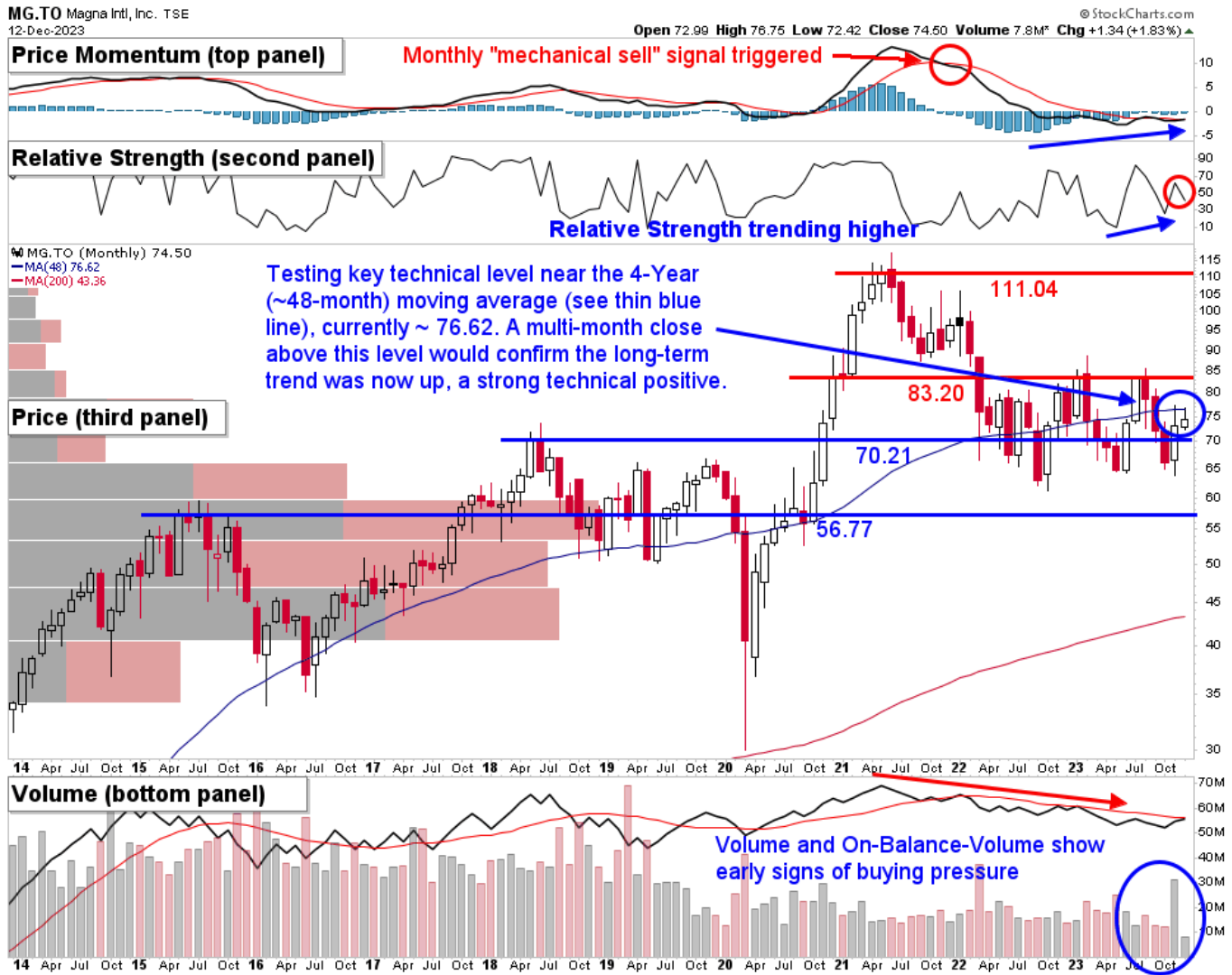
Exhibit 2: MRE – Monthly (10 years)



Source: Stockcharts.com, Raymond James Ltd.

- **Top Panel: Price Momentum (MACD):** MRE just triggered a new monthly “mechanical sell” signal (see red circle), indicating Price Momentum is weakening, a technical negative.
- **Second Panel: Relative Strength (SCTR):** Relative Strength versus the TSX Composite is turning up (see blue circle), an early technical positive.
- **Third Panel: Price:** MRE remains above an important technical level at the 48-month (~4-Year) moving average (see thin blue line), currently ~11.10. A multi-month close above this level confirms the long-term trend is up, a strong technical positive.
- **Bottom Panel: Buying/Selling Pressure (OBV):** Volume and On-Balance-Volume are showing signs of buying pressure, another technical positive (see blue arrow).

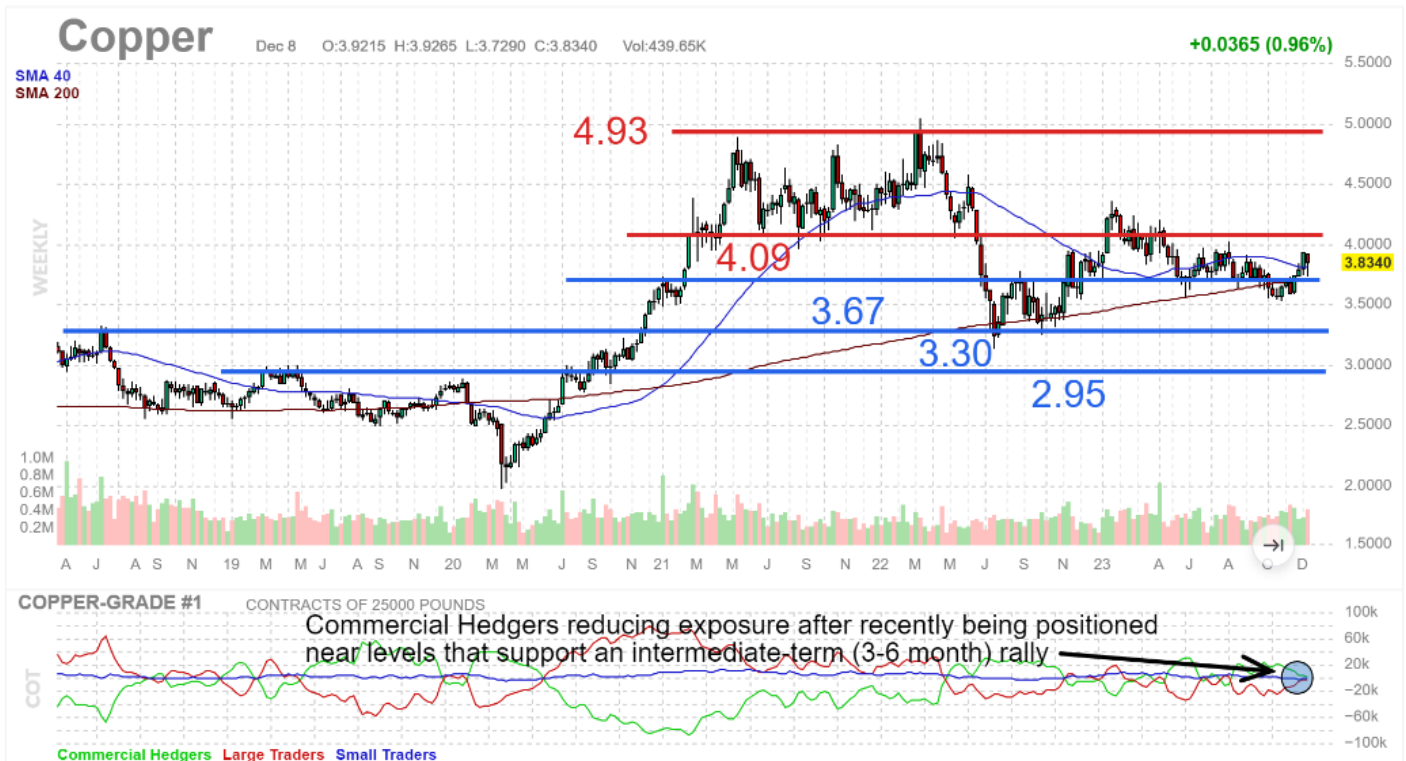
Exhibit 3: MG – Monthly (10 years)



Source: Stockcharts.com, Raymond James Ltd.

- **Top Panel: Price Momentum (MACD):** MG recently remains on a monthly “mechanical sell” signal (see red circle), indicating Price Momentum is weakening, a technical negative. However downward momentum is slowing, an early technical positive (see blue arrow).
- **Second Panel: Relative Strength (SCTR):** Relative Strength versus the TSX Composite is trending higher (see blue arrow), another technical positive.
- **Third Panel: Price:** MG is testing an important technical level at the 48-month (~4-Year) moving average (see thin blue line), currently ~76.62. A multi-month close above this level would confirm the long-term trend is up, a strong technical positive.
- **Bottom Panel: Buying/Selling Pressure (OBV):** Volume and On-Balance-Volume are showing early signs of buying pressure, another early technical positive (see blue circle).

Exhibit 4: Copper Commercial Hedger – Weekly (3 Years)



Source: FinViz.com, Raymond James Ltd.

- **Top Panel: Price:** Copper is rallying from first support ~3.67. A multi-day close above important resistance near 4.09 would support a new intermediate-term uptrend taking hold, a strong technical positive. This would then open the door for a test of major resistance ~4.93.
- Important support is near 3.30, followed by major support near 2.95.
- **Bottom Panel: Commitment of Trader Positions:** Commercial Hedgers have reduced exposure after recently being positioned NEAR levels that have historically supported an intermediate-term (3-6 month) rally (see blue circle, thin green line).

Exhibit 5: Copper – Daily (9 Months)



Source: Stockcharts.com, Raymond James Ltd.

- **Top Panel: Price Momentum (MACD):** This indicator just triggered a new daily “mechanical sell” signal, a technical negative (see red circle).
- **Second Panel: Copper vs. Gold:** Copper is trending higher versus Gold (see blue arrow), another technical positive.
- **Third Panel: Price Chart:** Copper reclaimed key technical levels at the 200/50-day moving averages (see thin red and blue lines), currently ~3.81 and 3.69, respectively. A multi-day close above these levels would confirm the intermediate and short-term trends were now up, a strong technical positive. First resistance is near 3.95 (see red line). First support is near 3.84 (see blue line).
- **Bottom Panel: Buying/Selling Pressure (OBV):** Volume and On-Balance-Volume show signs of buying pressure, a technical positive (see blue arrow).

Technical Analysis Glossary

Moving Average Convergence/Divergence (MACD) – MACD is a momentum indicator that utilizes two moving averages (usually the 12-day and 26-day) and subtracts the longer moving average from the shorter moving average. When the shorter moving-average is larger than the longer moving-average, the MACD value is positive; a positive MACD score typically indicates that the price of the shares are accelerating.

On-Balance-Volume – On-Balance-Volume is calculated by taking the volume on days that the stock increases in price and subtracting the volume from the days that the stock decreases in price. An increase in On-Balance-Volume suggests that the stock is under accumulation, which typically supports an increase in the price of the underlying stock. Conversely a sharp decrease in On-Balance-Volume suggests that the stock is being distributed, which by history usually is coincident or preceded share price weakness.

SCTR – An indicator on stockcharts.com that creates a numerical score based on six technical indicators and ranks each stock within a relative group. The SCTR score essentially ranks the stocks in an index relative to each other.

Links to Equity Research

Copper: <https://raymondjames.bluematrix.com/links2/doc/html/183dcf72-61bf-401d-b5c7-e0b0234c6541?id=Y3ludGhpYS5sdWlAc mF5bW9uZGphbWVzLmNhOjQ=>

ATS: <https://raymondjames.bluematrix.com/links2/doc/html/d67d80ae-3f73-4433-93e8-88df066d1ed9?id=Y3ludGhpYS5sdWlAc mF5bW9uZGphbWVzLmNhOjQ=>

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